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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/669,275 | 09/23/2003 | E. Seth Harbuck | PCRC 8472 U1 | 6566 |
| 1688 7590 01/24/2007 POLSTER, LIEDER, WOODRUFF & LUCCHESI 12412 POWERS COURT DRIVE, SUITE 200 ST. LOUIS, MO 63131-3615 | | | EXAMINER KOCZO JR, MICHAEL | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3746 | |

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| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
| 3 MONTHS | 01/24/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/669,275 | HARBUCK, E. SETH | |
| | Examiner | Art Unit | |
| | Michael Koczo, Jr. | 3746 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 25-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Applicant's arguments filed on August 30, 2006 have been fully considered but they are not persuasive.

Election/Restrictions

Applicant's election without traverse of the group I invention is acknowledged. Claims 25 to 29 therefore stand withdrawn from further consideration as being drawn to a non-elected invention.

Drawings

The drawings received on August 30, 2006 are objected to because of the following reasons:

The reference characters are not uniformly drawn.

Hatching lines must be equally spaced.

The structure of check valve 22, and the structural relationship between the piston 8, piston end cap 7 and the machine ball 17 cannot be determined because of the poor drawing figures.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure

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must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 16 is objected to because of the following informalities: in line 2, "10" should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims 1 to 24 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Due to the poor drawings and lack of a detailed description of the check valve 22, piston 8, machine ball 17 and piston end cap 7, it is not possible to ascertain the structure and manner of operation of the pump. For example, what structure forms the valve seat of machine ball 17 and in which direction does it prevent flow? How does fluid flow past the piston? These deficiencies would impose an

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undue burden on one of ordinary skill in the art to make and use the invention. Applicant argues that the operation of the fuel pump is discussed at page 8, line 7 to page 9, line 5 of the specification. However, a detailed description of the operation of the fuel pump could not be found at that location.

Claim 1 to 24 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are:

For example, in claim 1, there is no structural and functional relationship between the fuel filter assembly and any other structure.

In claim 5, the piston assembly, fuel filter assembly, coil assembly, piston end cap and machine ball are recited in a structurally disconnected manner.

In claim 6, the reset spring and check valve are recited in a structurally disconnected manner.

In claim 7, the filter cap, filter spring, filter and O-ring are recited in a structurally disconnected manner.

Claim Rejections - 35 USC § 103

Claims 1 to 4 and 30, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker (US 3,000,321) in view of Hultman (US 4,787,823). Parker discloses a fuel pump having an enclosure 20, a piston 64, a fuel filter 60, a coil assembly 82 and end caps 16 and 18. However, Parker does not disclose a microprocessor for sending impulses to the coil

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assembly. Hultman discloses a fuel pump which may use microprocessor control for sending impulses to the coil assembly (col. 12, para. 1). Microprocessor control facilitates modification of the operation of the pump in response to conditions via software modification. In view of this teaching, it would have been obvious to provide the pump of Parker with a microprocessor for sending impulses to the coil assembly. It is noted that the claims are replete with recitations of the intended use and the desired manner of operation of the pump, such as the desired coil frequency, fuel pump pressure, flow rate, impulse voltage and current, and ambient temperature. These recitations are not deemed structurally limiting. Furthermore, the pump of Parker is deemed inherently capable of operating with the recited coil frequency, impulse voltage and current, and ambient temperature, to produce the recited fuel pump pressure and flow rate in view of the structural similarity to the disclosed invention.

A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim (*Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)).

Claims 5 and 6, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker in view of Bradbury (US 1,337,388). Parker discloses the invention substantially as claimed. However, Parker does not disclose a machine ball as part of a check valve. Bradbury discloses a pump having a machine ball 18 functioning as a check valve. A machine ball is more robust when compared to the flap valve 70 of Parker. In view of this teaching, it would have been obvious to substitute a machine ball for the flap valve of Parker.

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Allowable Subject Matter

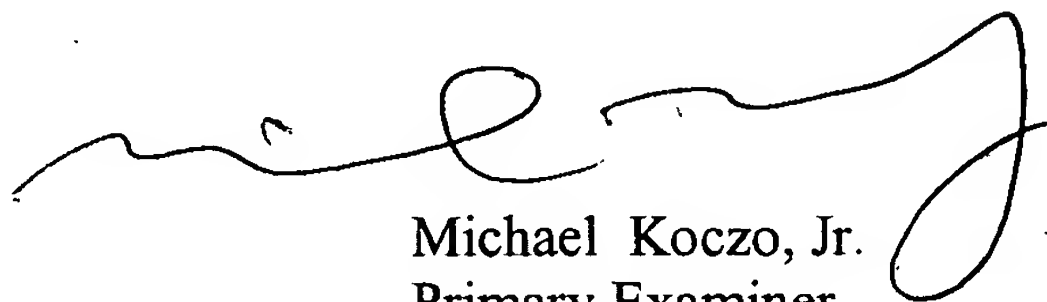
Claims 7 to 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st and 2nd paragraphs, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry relating to patent applications in general should be directed to the Patent Assistance Center at 1-800-786-9199.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Koczo, Jr. whose telephone number is 571-272-4830. The examiner can normally be reached on M-Th; 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached at 571-272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Koczo, Jr.
Primary Examiner
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